Exhibit L
(previously filed as Dkt. 647-12)

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA
ALEXANDRIA DIVISION

United States of America, *et al.*,

Plaintiffs,

v

Google LLC,

Defendant.

Case No. 1:23-cv-00108
HON. LEONIE H. M. BRINKEMA

EXPERT REPORT OF

TIMOTHY SIMCOE, PH.D.

DECEMBER 22, 2023

Notes: Large third parties are those whose total gross revenue constitutes at least 10 percent of total gross revenue among the included third-party exchanges between January 2019 and March 2023. The take rate for each group is calculated as the total net revenue between January 2019 and March 2023 for that group divided by is total gross revenue over the same period. I exclude DCN and Sharethrough from my calculations as their data pertains to US impressions only. I exclude Yahoo and Equativ as their data does not contain values for net revenue.

[1]: Excludes Open Bidding transactions.

[2]: Includes Index Exchange, Magnite/Rubicon, OpenX, Pubmatic, Sovrn, Xandr, and YieldMo.

[3]: Includes Index Exchange, Magnite/Rubicon, OpenX, Pubmatic, and Xandr.

224. In Figure 15, I also show how the results of the comparables approach would change if I exclude two "small" ad exchanges (Sovrn and YieldMo) that each account for less than 10 percent of the total revenue on non-AdX exchanges . For the remaining "large" exchanges (Index Exchange, Magnite/Rubicon, OpenX, Pubmatic, and Xandr) the weighted average take rate based on worldwide impressions is 15.6 percent. In Appendix D, I report additional robustness checks, including a set of weighted averages based on impressions served to a US internet users.

225. In Section IV.A.2, I explained how both economic theory and Google's own internal analysis suggest that the comparables approach yields a conservative estimate of the take rate that Google would charge in the but-for world. Thus, in my view, the estimates reported in Figure 15 provide an upper-bound estimate of the but-for take rate that provides a reliable basis for calculating the damages incurred by the FAAs.

V.A.2. Event Study Approach

226. Section IV.A.2 describes the event study methodology that I use to obtain a second estimate of the AdX take rate that Google would charge but for its exclusionary conduct. This method uses a regression to estimate two key parameters. The first parameter, α, measures the increase in market share that Google achieved by implementing UPR. Because Google could not implement UPR in the but-for world, this parameter provides an indication of the benefits that Google derives from its exclusionary conduct, and the corresponding harm to publishers and

estimates in column [B] are unbiased. The but-for take rate implied by the IV estimates is 16.6 percent.

233. The rightmost columns in Figure 17 present a set of OLS and IV results using data from only the "large" exchanges. For this sample, my estimates of α are somewhat larger than for the full sample that includes the two smaller exchanges (Sovrn and Yieldmo). For the large firm sample, my estimates of the implied but-for take rate are 15.7 percent based on the OLS model, and 16.2 percent based on the IV model.

234. The results in Figure 17 are robust to various changes in underlying assumptions. For example, Figure 27 in Appendix E shows estimates for the same IV and OLS models, with six variations in timing of the sample period and length of the lags in the instrumental variables. Although these alternative specifications do not have as strong IV diagnostics as those in Figure 16, they imply similar but-for take rates in the range of 15.0 to 17.3 percent.

235. In Figure 26 in Appendix E I report estimates of the same models in Figure 17 using data for only US impressions. Restricting my analysis to US impressions moderately decreases my estimated but-for take rates for each of my four regression specifications.

The event study approach does not account for how other ad exchanges would respond to a lower AdX take rate in the but-for world. In Section IV.A.2, I explained how both economic theory and Google's internal analysis suggest that takes rates could be substantially reduced in a counterfactual competitive equilibrium.[252] Thus, in my view, Figure 15 provides a reliable estimate of the upper-bound for the actual but-for take rate that can be used to calculate a conservative estimate of the damages incurred by the FAAs.

236. The but-for take rates calculated above are conservative for the reasons explained above. And even Google's own employees have discussed lower but-for take rates of 10%, 5%, or even lower for Google's exchange.[253]

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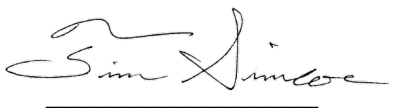
[252] See the discussion at paragraphs 154 to 157 above.

[253] GOOG-TEX-00106259, at -260–61 (11/04/2017) (Payam Shodjai proposing a 5% AdX rev share for Authorized Buyer demand and undifferentiated DV360 demand, or DV360 demand without proprietary Google data and targeting); GOOG-DOJ-32034896, at -896 (06/20/2018) (Aparna Pappu proposing that for Google's



Timothy Simcoe, Ph.D.

December 22, 2023

86	208	.	"…systematic review of documents produced by Google, as described in Appendix G."	"…systematic review of documents produced by Google, as described in Appendix H."	Typo
90	222	.	"…gross revenue values associated for all non-AdX exchanges…"	"…gross revenue values associated with all non-AdX exchanges…"	Typo
90	222	.	"…dividing the aggregated non-AdX net revenue into aggregated non-AdX gross revenue."	"…dividing the aggregated non-AdX net revenue by aggregated non-AdX gross revenue."	Typo
91	224	.	"In Appendix D, I report additional robustness checks…"	"In Appendix E, I report additional robustness checks…"	Typo
92	227	245	"*See* Section V.A.1 and Appendix C.1 for a discussion of the data."	"*See* Section V.A.1 and Appendix C.2 for a discussion of the data."	Typo
92	229	.	"…instruments in many other studyes.246 The potential endogeneity of prices of a well-known econometric concern…"	"…instruments in many other studies,246 to address the potential endogeneity of prices, a well-known econometric concern…"	Clarification
94	231	.	"…AdX's share of worldwide open web display impressions increased by 20.8 percent."	"…AdX's share of worldwide open web display impressions increased by 21.2 percent."	Typo
95	233	.	"The rightmost columns in Figure 17 presents…"	"The rightmost columns in Figure 16 presents…"	Typo
95	234	.	"The results in Figure 17…"	"The results in Figure 16…"	Typo
95	234	.	"Figure 27 in Appendix E shows estimates for the same IV and OLS models…"	"Figure 28 in Appendix E shows estimates for the same IV models…"	Typo
95	235	.	"In Figure 26 in Appendix E I report estimates of the same models in Figure 17…"	"In Figure 26 in Appendix E I report estimates of the same models in Figure 16…"	Typo
97	240	254	"…*See* Appendix C.3 for futher discussion."	"…See Appendix C.3 for futher discussion. *See also* GAM Elasticity Workpapers."	Clarification
98	244	.	"Appendix G provides a more detailed discussion…"	"Appendix H provides a more detailed discussion…"	Typo
99	Figure 18	.	"Notes: See Appendix G for more details…"	"Notes: *See* Appendix H.1 for more details…"	Typo
100	249	.	"This means that a 1 percent increase in the price of ads on AdX produces a 0.5 percent increase in the number of impressions available to AdX Advertisers."	"This means that a 1 percent increase in the price of ads on AdX produces a 0.47 percent increase in the number of impressions available to AdX Advertisers."	Clarification
101	250	.	"I discuss how I calculate AdX's supply elasticity based on each of these Google documents in more detail in Appendix G."	"I discuss how I calculate AdX's supply elasticity based on each of these Google documents in more detail in Appendix H.2."	Typo
101	252	.	"…fall near the bottom of this range, my estimates based on auction simulations fall near the bottom of this range."	"…fall near the bottom of this range."	Typo
101	252	.	"…will be conservative relative to calculations performed using four out of five of the elasticity estiamtes based on Google's internal analyses."	"…will be conservative relative to calculations performed using three out of five of the elasticity estiamtes based on Google's internal analyses."	Typo
101	Figure 20	.	"See Appendix G for more details…"	"*See* Appendix H.2 for more details…"	Typo
105	259	.	"Appendix D includes a recreation of Figure 22 for only US impressions."	[Delete]	Typo
107	266	265	"and at page 233"	"and at page 232"	Typo

124	Figure 29	.	"…AND NON-FAA IMPRESSIONS, JANUARY 2019 - JANUARY 2021"	"…AND NON-FAA IMPRESSIONS, JANUARY 2019 - JANUARY 2023"	Typo
130	Figure 31	304	"Ad Server Pricing, Epom…"	"'Ad Server Pricing,' Epom…"	Typo
133	Figure 33	321	"...('Amazon DSP is a demand-side platform that allows you to programmatically buy ads to reach new and existing audiences on and off Amazon.')…"	"...('Amazon DSP is a demand-side platform that allows you to programmatically buy ads to reach new and existing audiences anywhere they spend their time.')…"	Typo
134	Figure 34	325	"Shubham Grover, '22 Best Ad Networks for Publishers in 2023,' May 4, 2023,…"	"Shubham Grover, '22 Best Ad Networks for Publishers in 2023,' AdPushUp, May 4, 2023,…"	Typo
134	Figure 34	326	"...('As of Apr 11 2020, Audience Netowrk no longer'…"	"...('As of Apr 11 2020, Audience Network no longer'…"	Typo
134	Figure 34	326	"...'Meta Audience Network,' accessed December 20, 2023,…"	"...'Meta Audience Network,' Meta, accessed December 20, 2023,…"	Typo
135	289	.	"$\frac{\partial D^O}{\partial P^O} \cdot \frac{dP}{d\tau}$"	"$\frac{\partial D^O}{\partial P^O} \cdot \frac{dP^O}{d\tau}$"	Typo
138	Section H	Figure 35 Source	"GOOG-DOJ-AT-02204351."	GOOG-DOJ-AT-02204351, at -360 (09/03/2019).	Typo
141	306	.	"…buy-side take rate without changing the its take rate…"	"…buy-side take rate without changing the take rate…"	Typo
141	Figure 36	.	"Source: Brattle analysis of GOOG-DOJ-15140608."	"Source: Brattle analysis of GOOG-DOJ-15140608, at -609 (01/10/2014)."	Typo
147	320	.	"where the key variable x represents the amount of an AdX bid expressed as a percentage of its reserve price:" $C(x) = \alpha + \beta_1 \boldsymbol{x} + \beta_2 \boldsymbol{x^2} + \sum_{k=0}^{U} \gamma_k \cdot 1[\boldsymbol{x} = k] + \varepsilon$	"where the key variable b(x) is the bin corresponding to x, which is the amount of an AdX bid expressed as a percentage of its reserve price:" $C(x) = \alpha + \beta_1 \boldsymbol{b(x)} + \beta_2 \big(\boldsymbol{b(x)}\big)^2 + \sum_{k=0}^{U} \gamma_k \cdot 1[\boldsymbol{b(x)} = k] + \varepsilon$	Clarification
147	320	.	The expression $\alpha + \beta_1 \boldsymbol{x} + \beta_2 \boldsymbol{x}^2$ is a quadratic function of the AdX bid size.	The expression $\alpha + \beta_1 \boldsymbol{b(x)} + \beta_2 \boldsymbol{(b(x))}^2$ is a quadratic function of the AdX bid bin number.	Clarification
149	322	.	"...the publisher may re-auction the impression, re-allocate the impression to a direct campaign, or fill it with a default or house advertisement."	"...the publisher may re-allocate the impression to a direct campaign or fill it with a default or house advertisement."	Typo

January 13, 2024